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Introduction

This manual contains the policies, procedures, and recommendations of the Bureau of Communicable Disease Control and Prevention of the Missouri Department of Health and Senior Services (DHSS). It is intended as a guide for local public health agencies, district health offices, and other health care professionals who serve those in need of tuberculosis (TB) care. These guidelines were derived from statements and recommendations published by the Centers for Disease Control and Prevention (CDC), the American Thoracic Society (ATS), and the Infectious Disease Society of America (IDSA). This manual should be used to provide patient care and community control of tuberculosis throughout Missouri.

The diagnosis and treatment of TB is complex. While the material contained in this manual and the listed guides are extensive, questions may arise that are not fully covered. Further consultation and discussion with the DHSS TB Control Program is encouraged.

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Missouri Department of Health and Senior Services
Bureau of Communicable Disease Control and Prevention

Mission Statement

The Mission of the Bureau of Communicable Disease Control and Prevention (BCDCP) is to prevent, control, and eliminate communicable diseases, including tuberculosis, in Missouri. In cooperation with others, we will lead efforts to:

- Conduct assessments
- Develop policies
- Conduct Surveillance
- Control outbreaks
- Educate health professionals and the public
- Assure treatment

So that every individual has the opportunity for a healthy life.

Vision Statement

The Vision of the Bureau of Communicable Disease Control and Prevention is that Missouri will be a state of healthy communities with healthy people free from communicable diseases.

Values

The Bureau of Communicable Disease Control and Prevention is dedicated to improving health in Missouri. The staff values honesty, integrity, and respect for the people we serve and with whom we work. We are committed to education as a means of prevention. We are accountable, productive employees who strive for creative approaches and innovative solutions through effective communication and teamwork.

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Roles in the Control of Tuberculosis
General Information

Tuberculosis services in Missouri are provided on a cooperative basis by the Bureau of Communicable Disease Control and Prevention (BCDCP) of the Missouri Department of Health and Senior Services (DHSS), health care providers, including public and private hospitals, laboratories, long-term care facilities, home health agencies, local public health agencies, district DHSS offices, and metropolitan tuberculosis clinics.

Recommendations and guidelines for these services are provided by the Centers for Disease Control and Prevention (CDC), the American Thoracic Society (ATS) and the Infectious Disease Society of America (IDSA).

The CDC provides major funding for tuberculosis control. Funds are also provided by the State of Missouri from General Revenue for diagnosis, medications and treatment of tuberculosis, as a payor of last resort. Additional funds are also provided by local public health agencies.

The roles of each are explained in the following pages.

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Bureau of Communicable Disease Control and Prevention (BCDCP)

Bureau of Communicable Disease Control and Prevention has the overall responsibility for surveillance, containment, management and assessment of tuberculosis activities in the state. Specific duties include:

- Formulate and distribute guidelines for tuberculosis control in Missouri, utilizing established recommendations of the Centers for Disease Control and Prevention (CDC), the American Thoracic Society (ATS), and the Infectious Disease Society of America (IDSA).

- Provide epidemiological, technical, medical and programmatic consultative services regarding tuberculosis control to all health care providers, including local public health agencies (LPHA), Department of Health and Senior Services (DHSS) District offices, public and private physicians, nurses, and health care facilities.

- Purchase anti-tuberculosis drugs and contract for their distribution when funding is available.

- Implement the Diagnostic Services Program (DSP), which provides funding when available, for medical evaluation for tuberculosis disease and infection, chest x-rays, x-ray interpretation and sputum induction if necessary for all residents who need such services, provided that they have no medical insurance and are unable to pay.

- Work closely with the Missouri State Public Health Laboratory Tuberculosis Unit, to ensure quality laboratory services in the state.

- Ensure that reporting regulations are met and assist LPHAs in enforcing commitment laws when necessary.

- Verify and count all new and recurrent cases of tuberculosis disease and known tuberculosis infection within the state, along with identified cases of non tuberculosis mycobacteria (NTM). The bureau also maintains a register of all known persons with confirmed tuberculosis disease or infection.

- Compile and distribute epidemiological data on the incidence and location of tuberculosis disease and infection in Missouri.

- Conduct interstate transfer of information regarding tuberculosis patients and their contacts.

- Conduct semiannual evaluations of program quality indices, which are then forwarded to the CDC, and on-site evaluations of tuberculosis control programs as appropriate. Such objective evaluations are used to determine strengths and weaknesses of State and local program efforts and address them as appropriate.

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Health Care Providers

Health Care Providers, including hospital outpatient departments, infirmaries of state and local correctional facilities, mental institutions, federal facilities, local public health agencies (LPHA), and private providers in the community, carry out the roles of evaluating, diagnosing, prescribing, and monitoring the medical care of persons with tuberculosis (TB) disease or infection. According to the ATS/CDC/ISDA latest recommendations for the Treatment of Tuberculosis (MMWR 2003:52 (No. RR-11), "The responsibility for successful treatment is clearly assigned to the public health program or private provider, not to the patient."

Physicians, hospitals and laboratories in Missouri are required by state regulation 19 *CSR20-20.020* to report to the Department of Health and Senior Services (DHSS) or the local health authority, any suspected or confirmed TB disease within twenty-four (24) hours and any TB infection within three (3) days.

The reporting of each person with new or recurrent TB disease and each person with TB infection allows the resources of the LPHA/district offices and the Bureau of Communicable Disease Control and Prevention (BCDCP) to be made available to assist the provider in the appropriate management of the patient.

In addition to the Diagnostic Services Program (DSP), epidemiological services are available to identify and examine source cases and contacts. The LPHA may have chest x-ray capability. Some may have local laboratory services and local medical consultation. All LPHAs are able to link the health care provider with all services provided by the DHSS to assist the provider in the treatment and follow-up of each TB patient.

Close cooperation between health care providers and the LPHA or DHSS is imperative for the optimal outcome for the patient, contacts, and the community as a whole. Physicians and other providers described above are required to cooperate with the LPHA when a report is requested on the follow-up care being given to a patient. Periodic updates are required to monitor the patient's bacteriologic, x-ray, and chemotherapy status, or preventive treatment status.

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Missouri State Public Health Laboratory
Tuberculosis Unit

The **Missouri State Public Health Laboratory (SPHL), Tuberculosis (TB) Unit,** processes specimens submitted by local public health agencies (LPHA) at no charge to the patient, health care provider, or LPHA. Specimens submitted by private health care providers, health care facilities, or other laboratories, are processed at a nominal fee. The results of acid-fast bacilli (AFB) smears, mycobacterial cultures, anti-tuberculosis drug sensitivity studies, and mycobacterial organism identification are included in the services provided. The laboratory serves as the Tuberculosis Reference Laboratory for the entire state. A complete listing of services offered can be found on the Department of Health and Senior Services (DHSS) website.

Specimen containers may be obtained at no charge to patients or LPHAs by calling (573) 751-4830.

The TB Unit provides mycobacteriology diagnostic laboratory services to all Missouri healthcare providers and public health agencies.

Our mission is to provide accurate and timely detection, identification, drug susceptibility testing and genotyping of *Mycobacterium tuberculosis* complex (MTBC):

- In support of the State TB Control Program.
- To all public health agencies and Missouri healthcare providers.

The TB unit also provides limited identification of clinically significant nontuberculous mycobacteria (NTM) utilizing mycolic acid profile analysis and genetic probe technology.

http://health.mo.gov/lab/

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Private Laboratories

Private Laboratories, in accordance with state regulation 19 *CSR 20-20.080*, have the responsibility to report the findings of any test that is suggestive of tuberculosis, most specifically positive smears for acid-fast bacilli (AFB) and positive cultures for *Mycobacterium tuberculosis.* These reports shall be made within twenty-four (24) hours and shall designate the test performed, all results of the test, the name and address of the attending physician, the date the test results were obtained, the name and home address (with zip code) of the patient and the patient's age, date of birth, sex, race and ethnicity.

In addition, in order to provide epidemiological data and information regarding Tuberculosis (TB) in Missouri, including drug-resistance patterns and clusters found through DNA fingerprinting, all private laboratories are strongly encouraged to provide an isolate of all cultures positive for *Mycobacterium tuberculosis* to the Missouri State Public Health Laboratory (SPHL), Tuberculosis Unit.

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Local Public Health Agencies

Local Public Health Agencies (LPHAs) are a vital link in a successful tuberculosis control program. The role of the LPHA in the control of Tuberculosis (TB) is very important, whether the patient is hospitalized or is being treated on an outpatient basis. The LPHA has a major responsibility for instructing the patient in the importance of continuous and uninterrupted drug therapy and precautions to take to prevent the transmission of disease.

Case management for the individual patient, as provided by the LPHA, is the key to successful completion of TB disease and infection treatment. Directly observed therapy (DOT) is the standard of care for all patients with active TB disease. Monthly monitoring of the patients' clinical status, compliance with antituberculosis medications, side effects of medications, need for additional sputum examinations, liver function studies, if needed, and referral to health care providers as necessary, allow for the outpatient treatment of tuberculosis patients. A monthly report of each patient's status should be forwarded to the Bureau of Communicable Disease Control and Prevention (BCDCP).

The LPHA works closely with the physician to maintain standards of care for each patient, and is responsible for contacting any health care provider, including outpatient departments, infirmaries of state and local correctional facilities, mental institutions, federal facilities, and private physicians to monitor the current status of any patient residing in that county.

The LPHA also maintains surveillance for TB within the community and serves as liaison between local health care providers, facilities and the bureau.

Specific responsibilities include:

Initial Patient Visit:

This visit may be in the patient's home, the hospital, or at the local health agency. The initial visit by the LPHA, in consultation with the primary health care provider, will be made within three (3) business days after receiving the report of a newly diagnosed or suspected case of tuberculosis. **The initial visit is often the key to securing cooperation, and thus to the eventual successful completion of adequate treatment for the patient. Follow-up of contacts and/or identification of additional contacts are further enhanced by the initial home visit.** Reports of a patient with TB disease may come from the Bureau of Communicable Disease Control and Prevention, health care providers or facilities. The tentative diagnosis may be made on the basis of smears that are positive for acid-fast bacilli (AFB), or symptoms and x-ray findings compatible with TB disease. Individuals with positive smears are usually infectious, and the LPHA must be prepared with the appropriately fit-tested respiratory mask (N-95) for his/her protection. The health care provider should start the patient on appropriate

antituberculosis regimen (see the ***Core Curriculum on Tuberculosis: What the Clinician Should Know*** located at*:* http://www.cdc.gov/tb/webcourses/CoreCurr/index.htm) as soon as TB is suspected.

Contact Identification and Follow-up:

It is the responsibility of the LPHA to initiate contact identification and to assure that all contacts are evaluated for TB disease or infection and appropriately managed. Evaluations of high-risk contacts to current infectious cases of pulmonary or laryngeal TB represent the most productive method of case finding. The TBC-13 Worksheet for Contacts of Newly Diagnosed Cases of TB is useful for this process (**see the *TB Manual*; *Appendices/Sample Forms* located at**: http://health.mo.gov/living/healthcondiseases/communicable/tuberculosis/tbmanual/pdf/Appendices.pdf).

A contact investigation is indicated if the index patient has confirmed/suspected pulmonary, laryngeal or pleural TB. Contacts of infectious cases should be evaluated within 5-14 days, depending upon the priority level of the contact.

Comprehensive information about the index patient is the foundation for contact investigation. This includes disease characteristics, onset time of illness, names of contacts, exposure locations, and current medical factors (e.g., initiation of effective treatment and drug susceptibility results). Obtaining accurate information is very important, and depends upon establishing trust and rapport. Patients should be interviewed by persons who are fluent in their primary language. If this is not possible, the LPHA should provide interpretation services.

Determining the infectious period helps to focus the investigation on those contacts most likely to be at risk for infection and sets the timeframe for testing contacts. Because the start of the infectious period cannot be precisely determined, a good rule of thumb is to assign a start date 3 months before the diagnosis of TB. However, if the illness has been prolonged, it may be necessary to start further back, even over one year in some cases.

The ideal goal of contact investigation is to identify all contacts that have been recently infected and prevent TB disease by evaluating and treating them. In practice, however, contact investigations may identify additional cases of active TB (secondary cases) that will also need treatment and follow up, including a contact investigation.

For additional information please see CDC "Guidelines for the Investigation of Contacts of Persons with Infectious Tuberculosis. http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5415a1.htm

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